Institutional entrepreneurship, governance and poverty: Insights from emergency medical response services in India

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ABSTRACT

We present an in-depth case study of GVK Emergency Management and Research Institute, an Indian public private partnership (PPP), which successfully brought emergency medical response to remote and urban settings. Drawing insights from the case, we investigate how the organization established itself through institutional entrepreneurship using a process conceptualised as opportunity framing, entrenchment and propagation. The case and context highlight the need for innovation in organizational design and governance modes to create a new opportunity that connects state actors, private healthcare providers, and the public at large. We consider the role of open business and innovation models in creating these service platforms. The implications of our findings for the literature on PPPs, institutional entrepreneurship, inclusive and open innovation, and organizational design in base of the pyramid contexts are discussed.

Research has only recently started to recognize that consumers' socioeconomic characteristics play a crucial role in the design and delivery of services. In other words, scholars have commonly made implicit assumptions that are "needs-blind" and that the benefits of innovation will accrue to the society at large (Mokyr, 1992). Over the past two decades however, an important dialog highlights that a majority of innovations disproportionately benefits affluent societies, whilst there is a dearth of studies examining innovation and new venture creation in less developed contexts (Ahlstrom & Ding, 2014; Naudé, 2011). Whereas a rich literature in development economics tackles social interventions that improve the wellbeing of communities and economies (e.g., Perkins, Radelet, Lindauer, 2013; Sen, 1992), there is a growing, but still limited organizational literature that addresses how innovation and entrepreneurship can be stimulated, co-created, and harnessed for society, especially in impoverished communities (Bruton, Ahlstrom & Obloj, 2008; Bruton, Ketchen & Ireland, 2013; George, McGahan & Prabhu, 2012; Prahalad & Mashelkar, 2010).

More recently, researchers have called for studies on inclusive innovation, defined as "the development and implementation of new ideas which aspire to create opportunities that enhance social and economic wellbeing for disenfranchised members of society" (George et al., 2012: 663). In contrast to prior work that thought of low-income communities primarily as consumers (e.g. Ahlstrom, 2010; Prahalad, 2007), recent efforts have sought to address how communities can be successfully seeded to co-create and co-innovate, as well as develop products and services alongside corporations and public institutions as a way of localizing wealth creation, and sharing the benefits that accrue (e.g., Khavul & Bruton, 2013; Mair, Marti & Ventresca, 2012). Maintaining the goal as "enfranchisement" of these members of society, the principle behind inclusive innovation and social entrepreneurship is to lift individual and communal aspirations by creating new opportunities that improve social and

economic wellbeing (e.g., Dacin, Dacin & Tracey, 2011; Di Domenico, Haugh & Tracey, 2010). We provide an in-depth case study of GVK Emergency Management and Research Institute (EMRI), an Indian public private partnership (PPP), to explain one such model of how service platforms can be co-created and designed to reach low-income communities.

The co-creation elements of the service make this case especially relevant to studies of open innovation (Chesbrough, 2003). As opposed to 'open and distributed innovation' which emphasizes the potential for innovation at the *user* level, open innovation at the organizational level is conceptualized as 'the use of purposive inflows and outflows of knowledge' to facilitate internal innovation as well as expand external markets for its propagation (Alexy, George & Salter, 2013; Chesbrough, 2003). This definition has since expanded into 'open business models', which combine internal and external ideas together into platforms, architectures and systems, enabling organizations to become more effective in creating and capturing value (Alexy & George, 2013; Chesbrough, 2006; Zott, Amit & Massa, 2011). By designing a business model that has inputs from multiple actors, EMRI demonstrates the benefits of adopting open business models in impoverished settings.

Open innovation for services is a phenomenon increasingly studied within the developed world, where most of the top 40 economies in the OECD derive 50% or more of their GDP from the service sector. In this context, studies of large corporations such as IBM, Xerox and GE, have emphasised the trade-off between the efficiency benefits of standardization and meeting customer needs through customization (Chesbrough, 2011). 'Service platforms' have been identified as one solution to the problem, where external actors are encouraged to build on the service 'offering', whose originator benefits from economies derived from standardization. The emergency response service established by EMRI contained a set of interfaces that successfully link private hospitals and political actors,

providing an example of how service platforms can provide a low cost and open solution to delivering welfare service to consumers.

In this study, we examine how public-private partnerships based on open innovation principles can serve as an effective governance model for delivering new services that benefit socioeconomically disadvantaged communities. Recent studies have argued that for-profit Multinational Corporations (MNCs) and public non-profit organizations can form effective partnerships for providing services to the poor by acting as *institutional entrepreneurs* who change the rules of the game and influence social norms (Hall, Matos, Sheehan, & Silvestre 2012; Halme, Lindeman, & Linna 2012). Initiatives to shape the institutional environment represent acts of entrepreneurship, where actors (including firms) that envision institutional creation and change become involved in activities such as lobbying for new rules and regulations, developing norms of interaction and influencing the perceptions of key stakeholders (DiMaggio, 1988; Fligstein, 1997). Such involvement in setting the "rules of the game" requires actors to motivate cooperation as well as political imagination that represent their facility at negotiating agreements with actors that possess divergent interests (Jain & George, 2007). In doing so, these actors also build the legitimacy that is crucial to the enterprise and the effective delivery of its product or service (Ahlstrom, Bruton & Yeh, 2008).

To examine how public-private partnerships can deliver new services that will be accepted and benefit socioeconomically disadvantaged communities, we utilize an in-depth case study of the development of emergency response services in India (Tsoukas, 1989). We begin with a discussion on the prior state of Indian health and medical services. By observing the condition of emergency services in India prior to the creation of GVK Emergency Management and Research Institute, we can frame the challenges present in this context to understand how the opportunity was framed and enacted by those developing, delivering, and

receiving the services. We identified typical challenges in the Indian medical services that needed to be overcome in order to provide effective care to patients and reduce mortality rates. Having identified the circumstances that impede access to effective emergency services, we articulate the operational processes that were designed to meet local challenges, and account for the context that is particularly relevant to developing economies (Tsui, 2006). Finally, we interpret our observations through a theoretical lens and a discussion of future research avenues to explore ways in which to facilitate inclusive innovation.

Emergency care services in India

India had advanced trauma care services long before the concept of "shock" and "trauma" were understood in other parts of the world. "Arthasastra" a book written in 400 BC during the reign of King Chandragupta Maurya recorded that his army had an ambulance service for trauma care (Rangarajan, 1992). In spite of that head start, Indian emergency services have failed to keep up with global standards: It is estimated that from being the ninth leading cause of death, trauma will eventually move up to third position by 2020 (Mohan, 2002). Worldwide, 50 million people were injured each year, and it was expected to grow by 65% over the next 20 years (Peden, 2004). India would have a large share of injuries with an economic loss of 2% of GDP (Joshipura, Shah, Patel, & Divatia, 2004). India invests just over 4% of GDP on health, which is the lowest among the G20 countries (see Table 1). There was an absence of both physical and human capital with most healthcare personnel having little or no health services training to provide emergency care. The Indian Prime Minister characterized this challenge: "We have grievously erred in the design of many of our health programs. We have created a delivery model that fragments resources and dissipates energies" (Lahariya, Khandekar, Prasuna, & Meenakshi, 2007). In spite of this introspection, a developing economy has to engage in different trade-offs while balancing its various

investments. In India, healthcare investments assumed lower priority relative to expenditures on social and economic growth.

--Table 1 about here--
Health expenditure ratios in 2009

The World Health Organization mentions several ways to mitigate and minimize trauma, such as design of safer workplaces, child restraint in automobiles and the use of smoke detectors (Sasser, Varghese, Kellermannm, & Lormand, 2005), but these are not commonplace in India. The promotion of awareness, education and research in road-safety measures was not mentioned in recent official debates or campaigns – instead these tasks were taken up by NGOs. Other laws such as speed limits, protective helmet and seat belt requirements, the prohibition of drunk driving and vehicles safety standards have not been strictly enforced. The majority of traffic fatalities have recently been amongst pedestrians, motor bike riders and bicyclists (Mohan, 2002).

India's economic growth has created some of the best private health facilities but they have not traditionally been accessible to a majority of low income population. Over 80% of accident victims fail to receive medical care within one hour of an accident, 40% of the country did not have access to clean drinking water and less than 30% had sustained access to improved sanitation (WHO, 2001), resulting in diseases and emergencies unique to the Indian situation. India also faced major problems in providing emergency medical services to pregnant women who faced life-threatening conditions. In addition, there were differences between the quality of services accessible in urban and rural settings, as well as between paying and non-paying customers. There were no standardized rules for triage, patient delivery decisions, pre-response critical care, pre-hospital and hospital treatment plans or transfer protocols. Only 4% of the ambulance staff had formal training and most ambulances were used for transportation without paramedics (Joshipura et al., 2004). Table 2 provides an overview of the casualties observed in the Indian context relative to UK and USA.

--Table 2 about here--
Comparative data on casualties

Gaps in Emergency Services: Access, Resources and Infrastructure

The Indian context posed some unique challenges to the implementation of emergency care solutions. India lacked basic amenities present in developed economies. Although not exhaustive, the problems EMRI faced in implementing their business model related to: *access, resources* and *infrastructure* (Figure 1), each representing inherent challenges to any enterprise looking to introduce emergency services to remote parts of India.

[Figure 1]
Challenges of Access, Resources and Infrastructure

Problems of Access

Emergency Number: One fundamental problem was the lack of a unified emergency telephone number to call in case of emergencies. A central number existed for the police, and a different number for the fire department, but none for medical emergencies. All medical emergencies thus required a phone call to local private hospital or ambulance services. *Affordability:* Private medical facilities were expensive and a large section of society could not afford them. Instead, they had to resort to public medical facilities which were constantly overburdened. The ambulance service was particularly costly to maintain at a local level. There was a need to reduce costs despite them not being able to charge people. Often a majority of patients and their families were pushed into poverty to cover the costs of healthcare.

Resource Scarcity

Training: Only a few courses in emergency care had been evaluated in India. The advanced trauma life support course, although very expensive, had been evaluated rigorously and had resulted in improved healthcare delivery in many areas. The available courses in India ranged from $50 to $700 per trainee. The expensive advanced trauma life support course was trusted worldwide but did not take into consideration local conditions or capabilities. The less expensive courses, which were locally developed, took these into consideration but were not deemed to add sufficient value not having been evaluated by any third party -- this created a lack of trained professionals who could provide a reasonable standard of emergency healthcare services in the localities. *Ambulances:* In terms of local hospitals and ambulances, the fact that medical facilities were not linked to a single number meant there was also limited access to an ambulance when it was needed most. The majority of patients, even in urban locations, were taken to hospital in private vehicles; and the situation in rural areas was far worse.

Infrastructure Challenges

Hospitals: As most people suffering injuries or emergencies were from low-income households, they accessed public hospitals run by the government, which were overwhelmed with a large number of non-paying patients. Hence the care provided was basic. This aspect had to change in order to make it comparable to leading public hospitals in developed countries. *Transport:* Ambulances would also need accurate maps and road signs that might not be available for many districts, especially in rural parts of India. Traffic congestion, poor maps and road signs would not help translate estimates to an actual response time in India. The model adopted would have to take into consideration long and short response times along with the level of facilities and resources available. *Legal Framework:* Meanwhile, there was a potentially debilitative legal framework prevalent in India at the time. It meant that ordinary people were hesitant to help others in need due to the annoyance expressed by police. In response to this, the Supreme Court of India released a verdict that protected individuals attempting to save lives during a crisis, a ruling that allowed ordinary citizens to help the injured or ill without fear of legal harassment. In 1989, in the Parmanand Katara vs. Union of India, the Supreme Court of India ruled that the State had an obligation to preserve life and that it was the professional obligation of doctors, public or private, to provide immediate care to injured people. The Court noted that an effort to save lives should be a priority not only for medical professionals but for anyone present at the scene of an accident.

In sum, Indian emergency services suffered from a lack of resources and infrastructure, as well as inadequacy of information which created problems of access. Any effort to transform this sector would require confronting these challenges by devising an appropriate, low-cost business model as well as engaging with multiple stakeholders to overcome the institutional vacuum present in emergency medical services.

Institutional entrepreneurship at EMRI

In this context, Emergency Management and Research Institute (EMRI) was formed in 2005 to provide first responder services in Andhra Pradesh, a southern state of India in its capital city, Hyderabad. The venture itself was the philanthropic brainchild of Mr. Ramalinga Raju, a software entrepreneur who formed the organization Satyam. EMRI had a vision to provide low cost emergency medical services. Raju provided initial seed funding of £4 million, which was first headed up by Venkat Changavalli, a professional manager and CEO, who had previously headed a successful multinational enterprise subsidiary in India. In 2009, GVK, an infrastructure company, took over the operations of EMRI (becoming GVK EMRI) after the original founder Mr. Raju was arrested for accounting irregularities in his software company. Since 2005, EMRI has grown from servicing only one of India's states to 14 states, responding to 30 million emergencies and saving over 1 million lives annually by 2013. EMRI supplies 800 ambulances and responds to 3500 emergencies a day in Andhra Pradesh alone, and manages a fleet of over 4500 ambulances in India. EMRI's growth and brief history is shown in Table 3.

--Table 3 about here--
Timeline of EMRI

To provide an effective emergency service solution in this problematic context, EMRI had to overcome institutional voids by building legitimacy through engagement with different actors on multiple levels. In this section, we define the process by which EMRI managed to bring about fundamental change in the delivery of emergency healthcare services in India. It was achieved in three stages (Figure 2): *Opportunity framing*, in conceiving the sense-reach-care paradigm; *opportunity entrenchment* by engaging necessary actors through an effective public-private-partnership and finally *opportunity propagation* using a low-cost business model and local service delivery to achieve scale.

[Figure 2]
Process of Institutional Entrepreneurship

Institutional entrepreneurship refers to 'the activities of actors who have interest in particular institutional arrangements who leverage resources to create new institutions or to transform existing ones' (Maguire, Hardy & Lawrence, 2004: 657). These actors 'create a whole new system of meaning that ties the functioning of disparate sets of institutions together' (Garud, Jain & Kumaraswamy, 2002). As a concept, it has encouraged the study of institutional processes in emerging fields to understand how organizations can influence their environment and effect change (Greenwood, Hinings, & Suddaby, 2002). In this way it combines agency, interests and power to organizational analysis, each of which we observe in the activities pursued by EMRI through opportunity framing, entrenchment and propagation.

The focus on 'opportunity' relates to the entrepreneurship literature, where it has emerged as a central construct (Kirzner, 1997). While entrepreneurship scholars have previously been concerned with what determines the nature, character and discovery of opportunities (Companys & McMullen, 2007), recent scholarship has focused on action theory, specifically how beliefs are formed through a process of discovery, evaluation and subsequent action (McMullen & Shepherd, 2006; Shepherd, McMullen & Jennings, 2007; Baron & Ensley, 2006). In our analytical framework, we are concerned with the institutional processes of how entrepreneurs manipulate means and cognitive frameworks to change preferences and enact opportunities. However as part of this, a key stage in this process is how our focal organization came to discover, evaluate or frame the opportunity for an effective model of emergency services.

Opportunity Framing: The Sense-Reach-Care paradigm

EMRI borrowed elements from three prevalent delivery models worldwide, namely Anglo-American, Franco-German and the developing nation's model, in order to develop a

new business model specific to India. By understanding that each model had its virtues and flaws and that the Indian context presented a unique set of problems, EMRI realised that a readymade solution would not work in India as had proven true for many failed businesses that had tried to adopt foreign models in India. The general observation was that the bureaucracy, difference in business practices as well as corruption tended to magnify the shortcomings of the models. The opportunity had to be framed in such a way that EMRI's business model could be tailored to the Indian customer. The pilot program of emergency medical services was therefore initiated in the state of Andhra Pradesh, which had a population of 80 million.

Venkat, the CEO, leveraged the process excellence of Satyam Computers (now Tech Mahindra), and capabilities in technology, process, project management, and design – "this is what we're good at" and framed the opportunity by designing the EMRI business model along the *Sense-Reach-Care* paradigm (Figure 3). In our interview, he observed that, "EMRI has developed the sense-reach-care paradigm for emergency management, as it demands a synergistic effect of technology, process and people who care." To achieve this objective the same level of process rigor and analysis that was prevalent in for-profit businesses was applied and the systems thinking discipline was brought to the various sub-tasks for the Sense-Reach-Care paradigm. In an interview, a senior executive added, "we wanted to innovate in each sub-task across this cycle. *We counted 52 innovations in all across these three*" (emphasis added).

108: Emergency Call Number: EMRI was given a three-digit number, 108 by the Government of India at the request of the Government of Andhra Pradesh. A toll-free telephone number was designated to report any kind of emergency: medical, police or fire. The number 108 was chosen due to its importance in the Indian context which would have

higher recall value as compared to any other number. This number is thought to be sacred in many religions and traditions, such as Hinduism, Buddhism, Jainism, and Sikhism.

Sense: During this stage, information is taken from the caller regarding the emergency which is used to mobilize a response on behalf of the Emergency Response Centre (ERC). A set procedure relevant to individual emergencies had been established and depending on the caller's emergency, one of the procedures was put into action. The first interface between the caller and the response team was the Communication Officer (CO) who collected and recorded all facts regarding the emergency within 30 seconds. CO had to take down the information in a fixed format and immediately transfer it to a Dispatch Officer (DO). The decision on the course of action rests with the DO. So, DO identifies the landmarks near the location of the emergency and communicates this information to the staff on the ambulance closest to it. In the case of police or fire incidents, the local state police office or fire department is instantly notified with full information.

Reach: From the time an emergency is reported and logged, EMRI aspires to reach the patient within 20 minutes. As part of resource allocation, the limited resources at its disposal are maximised, hence some ambulances are fitted with Advanced Life Support systems and some with Basic Life Support and dispatched depending on the nature of the emergency; this made sense in the early stages of the project where the actual number of advanced and basic emergencies was not known to EMRI. The decision to send the appropriate ambulance was usually made by the DO, but in more complicated or developing situations, the decision was left to an in-house Emergency Response Centre Physician (ERCP). Once the appropriate ambulance is dispatched, an Emergency Medical Technician (EMT) on this ambulance takes over the communication management with the victim. EMT provides information and provides an approximate time that an ambulance will arrive on site.

Care: When the ambulance reaches the scene, the patient is transferred to an appropriate hospital. An EMT takes the necessary precautions to stabilize the patient in order to carry him to the nearest hospital. In addition, the EMT can be on a conference call to receive guidance from an Emergency Response Centre Physician (ERCP) available 24x7. The DO monitors the scene and can be on a conference call providing directions to the van. The team of ERCP collects the patient's vital signs and guides the EMT on providing the pre-hospital care to the patient whilst in transit to the hospital. The ERCP also contacts the hospital to provide pre-arrival instructions. This results in a faster, more effective response by the hospital. A Patient Care Record (PCR) is prepared in transit, which is then passed on to the receiving hospital. A copy of the same is also handed to the EMRI head office later. A follow-up is carried out after 48 hours to assess the impact of care given to every patient. An overview can be seen in Figure 3.

[Figure 3]
The Call Handling Operation

Developing processes to suit the *Sense-Reach-Care* paradigm

EMRI infrastructure was divided into three core areas: Emergency Response Centre, IT infrastructure, and ambulances.

***Emergency Response Centre*:** The emergency calls are routed to this central node and all activities are directed, controlled, analysed and researched at this location. Emergency Response Centre was created with a seating capacity for 76 communication and dispatch officers.

***IT Infrastructure*:** This included fully automated PBX/Telecom Switch, Computer Telephony Integration (CTI) Server, Call Centre Server (CCS), Voice loggers, and Interactive Voice Response System.

***Ambulances*:** Ambulances were deployed in a way that they could minimize the response and transportation time. EMRI identified three key elements along which their ambulances were developed: Patient care, Driver comfort and Public Safety. The Indian-built ambulances were uniquely designed to handle 48 kinds of emergencies at an economical cost, and were equipped with the latest communication equipment to ensure patient and public safety. One interviewee executive explained: "In India the situation was different, the relatives (are concerned) and fight with the patient to get in. This meant having to create adequate space for the patient and up to three relatives."

India's narrow roads, fires, floods and terrorist activities create challenging design requirements for ambulances there. The ambulances were constructed with Fibre Reinforced Plastic that renders them fire resistant and provide thermoregulation and noise regulation. Indian ambulances also have a low loading height, which make it simpler and more economical to develop an automatic loading stretcher. In addition, a battery backup provides power to patient life support units and other services within the ambulance, which can also be charged from external ports at accident sites. The ambulance is equipped with extrication tools, fire extinguishers, rescue blankets, shovels, public address system, a defibrillator, and five different kinds of stretchers. Taking into account the likely delays during travel from the site of the accident to the hospital, the ambulance includes an oxygen cylinder that can provide continuous oxygen supply for up to 8 hours. EMRI was able to design these ambulances at one-fourth the cost compared to similar ones abroad. As the CEO explained: "Such ambulances in UK cost £65,000 and £165 on average was spent on a single trip. We could produce the same at £15,000 and reduce the trip costs to £5. This was essential as the service had to be free for all." An overview of the Sense-Reach-Care paradigm is shown in Figure 4.

[Figure 4]
Sense-Reach-Care paradigm

Opportunity Entrenchment: **Legitimacy-creation through multiparty engagement**

Building legitimacy in new and nascent fields requires actors to engage in a process of institutional entrepreneurship (Selznick, 1957; DiMaggio, 1988, Fligstein, 1997). This involves the mobilization of resources to create new institutional logics or transform existing frameworks by spreading innovation and ensuring its acceptance by stakeholders (Jain & George, 2007). This process of 'institutionalization', which we define as 'opportunity entrenchment' involves a series of legitimation activities, such as allying, lobbying, co-opting or contesting other actors in an attempt to create the underlying socio-political and cognitive infrastructure required to sustain interactions between different actors (Van de Ven & Garud, 1994). It can enable entrepreneurial actors to define organizational boundaries and dominate nascent markets through the adoption of 'soft power' strategies (Santos & Eisenhardt, 2009).

Another strand of theory considers the socio-cognitive processes behind the construction of shared meaning in new market categories and how it shapes perceptions of value within the field (Khaire & Wadhwani, 2010). In this literature, categories act as institutions that facilitate exchange and shape economic outcomes by informing perceptions in new product and service markets (Garud & Ahlstrom, 1997). These processes have been investigated at the level of organizational networks, specifically in tight-knit industries such as biotechnology, where structural components can evolve through inter-organizational collaborations and the formation of sub-networks which condition choices and opportunities available to the members of institutional fields (Powell, White, Koput, & Owen-Smith 2005). Our case illustrates how a similar process occurs within a weak institutional environment, providing insights into how EMRI influenced State and non-state actors to adopt their service platform and form a public private partnership through a process of opportunity entrenchment.

During the 10th Five Year Plan, the Government of India drew a conceptual model to promote effective utilization of resources targeted towards health and related infrastructure in India. As an executive added:

> Any common man will think that these things can be done by the government...He will only respect when the government is involved.... That man thinks: is the CM (Chief Minister) supporting? Is the police supporting? Is the district collector and the local MP behind this?

This highlights the importance of legitimacy granted by engaging closely with the Government. EMRI needed commitment from politicians and the police so that ordinary Indians would not be harassed if they used EMRI's emergency services. To do so, EMRI worked directly with the police to publicize that people need not worry about getting tangled up in police investigations.

On top of building widespread legitimacy within the local environment, EMRI wanted to work closely with the government to find a way in which it might achieve the national scale that EMRI had envisioned from the outset. Government intervention and financing was therefore crucial for future development. EMRI initially signed a memorandum of understanding with the state government of Andhra Pradesh. As EMRI's early activities were self-funded, the government was initially engaged simply to provide oversight of their operations. Hence, every three months there was an advisory council meeting with State officials (chief secretary, health secretary, finance secretary, home secretary and revenue secretary) who discussed all issues related to EMRI's operations. EMRI also introduced a similar meeting every three months at the district level, with the District Collector and the Superintendent of Police, in order to review performance and discuss local challenges. In this

way, EMRI could collect information from the grassroots, as well as from the top of the government to better streamline operations with the State.

Creating a Public-Private-Partnership (PPP)

Once the Government became involved in the project, EMRI strengthened the relationship by developing a partnership which would enable it to scale up the emergency services. However, the creation of a PPP[1] was not without challenges. EMRI's executive explained that: "CM (chief minister of the state) was asked to fund one-third of the costs." Although the government was asked to fund few ambulances in the first instance, the health secretary eventually sanctioned money for 110 ambulances and asked EMRI to run them on the government's behalf. There was a problem in that the health secretary wanted to buy the same Basic Life Support Ambulances that EMRI used, at one fourth of their original cost. For EMRI this was impossible, having spent time and energy into developing the low-cost ambulance, they knew the price could not be driven down further. The health secretary also suggested that EMRI could charge the patients for the services, which EMRI was reluctant to do. Subsequently after much discussion, the initial attempt to establish a PPP fell through. In subsequent discussions, it was suggested that EMRI would pay the difference in costs and run the ambulances themselves. As a gesture of goodwill towards the government, which would eventually bear fruit for EMRI, they accepted and a PPP framework was established. After one year of operations, the government decided to finance a majority of its emergency services operation. EMRI's relationship with key actors is presented in Figure 5.

[Figure5]
EMRI's interaction with key actors in the delivery of emergency healthcare services

[1] Though we call it PPP, the contracts between EMRI and the state governments calls the relationship as "Public Private Not-for-Profit Partnership"

Opportunity propagation and achieving scale

The process of institutional entrepreneurship in emerging fields has been well documented in developed countries (Garud et al., 2002). In the context of HIV/Aids treatment in Canada, firm activities are broken down into the occupation of 'subject positions' that bridge multiple stakeholders, and the informal formulation of new practices, which become institutionalised by connecting them to stakeholder routines and values (Maguire et al., 2004). This process, which we term 'propagation', is fundamental to the success of new ventures based on emerging technologies as well as the creation of new organizational forms, arising from institutional entrepreneurship (Tracey, Philips & Jarvis, 2011). In the context of EMRI, we discuss how this process of formulating new practices and their institutionalisation in the routines and values of local political and business actors enabled it to achieve scale and establish their service platform as the dominant model for emergency healthcare services in India's northwest.

Gaining legitimacy and financial support for a new delivery model of emergency healthcare services required engagement with multiple actors (Figure 5). However, in terms of building a sustainable business model that would scale across parts of India, the issue of financing in the PPP was a key factor. In the early stages, EMRI had developed an efficient transactive structure for coping with the high coordination costs involved in emergency service operations. However, to achieve scale the business required government funding acquired through a public private partnership.

Following the initial PPP agreement, funding was willingly introduced through the State budget for ambulances, which were run on a 50:50 sharing basis. The following year, the government was ready to finance more ambulances, but by now EMRI's overhead had increased, meaning that in future this arrangement would not work. Yet by this point, they had firmly entrenched themselves within the local community, having built up sufficient

legitimacy for people to have taken to using EMRI's services throughout the state. With elections approaching, the government, wanting to be seen as doing something good for the people, agreed to purchase all the ambulances. EMRI requested the government sponsor their operational expenses, which by then, the government was so committed to the project they agreed to all requests put forward by EMRI. The government provided funds to meet all costs for the centre, property and technology hardware as well as the ambulance costs, to the extent that 90% of operational expenses were now funded by the government.

Legal risks such as protecting the staff were also absorbed by the government so that EMRI, being a non-profit organization, would not be susceptible to legal action arising from customer dissatisfaction. A major challenge for any project involving government would be the transience of political parties. Hence, short-term contracts would run the risk of being overturned once the government changed. EMRI wanted to insulate the emergency services from any such risk inherent in the Indian political system, and so The PPP agreement was signed to extend for a course of ten years.

Building capabilities for local service delivery: 'Volunteers In Case of Emergency'

The three stages of Sense-Reach-Care at this point embedded in EMRI's internal business processes were well organized and helped it respond to emergencies in an appropriate manner. However, EMRI realized that the scale and effectiveness of the model would increase significantly if volunteers could act at the lowest end to make up for the operational and infrastructural shortcoming within the local Indian context. Hence, a volunteer network with each volunteer serving as a Brand Ambassador, Resource Provider or Service Provider. This network was called 'Volunteers In Case of Emergency'. Brand Ambassadors created awareness about EMRI, 108 services and enabled people to access emergency services effectively in their respective area. Resource Providers provided essential resource to the victims during emergencies, as well as to EMRI field personnel for rendering

effective emergency services. Service providers were to render timely skill-based services in the process of saving lives. For example, if a volunteer is a doctor, they could administer pre-hospital care before the ambulance reaches the victim. Volunteers also provided some generic services such as reporting emergencies to help those without access to a telephone or accompanying victims to the hospital. The organizational structure at a State level is shown in Figure 6.

[Figure 6]
EMRI's Organizational Structure at State Level

Due to resource scarcity, the most valuable characteristic of this volunteer network was that it could effectively scale up to a national level. By enabling local service delivery in this way, EMRI could design a low-cost business model that was acceptable to the Indian government as well as other stakeholders such as public and private healthcare providers.

Culture of research and training

According to EMRI, research and training was crucial to the organization's long-term sustainability and ambitions for achieving scale. Research could help them adapt their resources to specific Indian circumstances. EMRI created a three-winged research team, which consisted of medical, systems and operations researchers. The medical research team considered issues around interventions in specific emergency conditions, innovations in interventions and capabilities. The systems research team studied best practices in emergency medical services around the world. Finally, operations researchers were concerned with better application of available resources and reconfiguration of processes. Similarly, training emergency personnel was essential for EMRI to build capacity and overcome deficiencies in the existing infrastructure. Consequently, EMRI signed an agreement with Stanford School of Medicine to provide training for Emergency Medical Technicians. Also in association with

Stanford, EMRI initiated a two-year Postgraduate Program in Emergency Care. A similar agreement was reached with Singapore Health Services to provide training for doctors.

DISCUSSION AND FUTURE RESEARCH

It is paradoxical that 40% of India's population should live in poverty when the economy is growing at a rate of 6-8% per annum (in GDP terms). The fact that until recently the majority of people in India could not afford essential emergency care services, and that individually both public and private sectors had been unable to overcome this problem, makes EMRI a salient case in point. Within this context, theories of institutional entrepreneurship and public private partnerships (PPPs) help us understand how EMRI managed to incorporate the strengths of public and private players to overcome the failures of both the government and the market to initiate emergency healthcare services. GVK EMRI via an effective PPP model has managed to establish itself as the number one provider of emergency services in India, achieving rapid scale with over 3,400 ambulances in 14 regions across India. With average response time of less than 20 minutes, effective coordination and process design has enabled EMRI to respond to 30 million emergencies, and have adopted a tag line 'saving one million lives every year'.

Our case study provides much insight into questions arising from both scholarly and policy interest in innovation for inclusive growth. Questions those as yet remain unanswered by current management theory, such as which types of governance modes are most suited to delivering inclusive innovation? What role does institutional entrepreneurship and legitimacy building play in overcoming resource constraints and transforming the status quo (Ahlstrom, et al., 2008)? And what determines the success or failure of top-down versus bottom-up innovations? (George et al., 2012)

EMRI provide a unique set of starting conditions for discussions of inclusive innovation by tackling key issues in the organization, distribution and allocation of benefits resulting from initiatives to deliver essential welfare services. In this section, we evaluate some of the current theories in strategy, entrepreneurship and innovation that are relevant in our context to theories of innovation for inclusive growth. Specifically, we provide new perspectives on PPPs as effective governance modes for inclusive innovation; bottom-up innovation and the effects of institutional entrepreneurship in overcoming the rules and norms of public and private activity (e.g., Jain & George, 2007), coordination costs and organizational design (e.g., Kotha, George & Srikanth, 2013) in the delivery of welfare services under resource constraints.

Public Private Partnerships and Theories of Governance

A perceived failure of many modernization and dependency approaches towards poverty alleviation by top-down policy interventions has led to the emergence of alternative market-based solutions (Roxas & Ungson, 2011). A growing body of literature has shifted the focus towards multinational corporations, arguing that they must think beyond maximising their profits and take a more active role in social welfare and delivering innovation for inclusive growth (Guthrie & Durand, 2008; Hinings & Greenwood, 2002; Khavul & Bruton, 2013).

Companies are increasingly expected to provide innovative solutions to global problems such as climate change, poverty and hunger, despite their primary economic function supposedly being to maximize shareholder returns (Margolis & Walsh, 2003). By arguing that MNCs can pursue both profit and social welfare simultaneously, the emphasis has so far been on the untapped market at the 'Base of the Pyramid' (BoP) within which companies can improve the lives of billions of people by selling affordable products and enfranchising them as both consumers and employees (Ahlstrom, 2010; Kistruck, Beamish,

Qureshi & Sutter, 2013; London and Hart, 2004; Prahalad, 2007). In this way, poverty alleviation and profit are neither mutually exclusive nor irreconcilable within the context of an enterprise-based market system.

Organization scholars and economists are becoming increasingly concerned with the question of what determines the boundaries between public and private activity as well as what are the social and economic implications of these choices (Hart, 2003; Lerner, 2009; Mahoney, McGahan & Pitelis, 2009). Driven by the presence of positive externalities, resource complementarities and cost efficiencies, new and emerging forms of public-private collaborations are redefining governance in these two sectors (Kivleniece & Quelin, 2012), turning public-private-partnerships into a new management buzzword.

While much work has been done to understand the ideal preconditions (Rangan, Samii & Van Wassenhove, 2006) as well as governance attributes and inherent tensions between private rent-driven objectives and wider social welfare benefits (Margolis & Walsh, 2003), only recent PPP literature examines the underlying value-creation and capture mechanisms to address the question of who benefits from these partnerships and how (Kivleniece & Quelin, 2012). EMRI provides a unique context for assessing value creation in PPPs, in the case of the private actor being a non-profit organization.

In the PPP model, a private player supported by a public sector authority assumes the financial, technical and operational risk of delivering a public service to enable strategies that might later be absorbed by the government. Different organizational forms have been discussed in the context of inclusive innovation, such as partnerships with non-governmental organizations (NGOs) or charities providing viable access to remote communities (Jain & George, 2007). However, current literature provides little insight into how organizational actors select among different governance alternatives and what determines their long-term performance (Young, Ahlstrom & Bruton, 2004). In addition, while PPPs have been

described as social and knowledge bridges connecting isolated communities (McDermott, Corredoira, & Kruse, 2009), existing case studies have not yet been subject to analysis to determine whether they represent a viable model for delivering inclusive innovation.

In the context of health education and sanitation in developing countries, PPPs such as the Global Handwashing Initiative led by the World Bank and Indian government enterprise HLL Lifecare, have been used to demonstrate how diverse motivations of key stakeholders produce inherent tensions, such as the political roadblocks that stifled HLL's plans to deliver health education and expand the soap market in India (Prahalad, 2007). In contrast, EMRI is an example of successful collaboration between a private organization and the State to provide an essential public health service. These alternative governance modes such as 'co-creation' with private partners have brought about new business models for delivering inclusive innovation under resource-constraints.

EMRI is just one of many PPP examples whereby innovation, risk sharing and regulatory support have made possible social innovations that benefit the disenfranchised. For instance, in the delivery of local education, a country such as India faces problems of access and coordination costs both in placing skilled teachers and introducing standardized learning materials in local schools. The Indian Government sought to overcome these problems by working alongside research institutions and private partners to develop the $35 Sakshat Tablet. Equipped with all the functionality for email, internet browsing and video streaming, this PPP leverages the development expertise of UK company DataWind, the low-cost manufacturing capabilities of Quad in India and the coordination and distribution access of the State to meet the goal of linking 25,000 colleges and 400 universities in a national e-learning program which hopes to bridge the 'digital divide between those children with computer and internet access and those without.

Institutional Entrepreneurship and Poverty Alleviation

In the case of EMRI, the deployment of emergency services by a private sector participant necessitated new institutional norms and entrepreneurship to introduce a model that would ensure goal alignment and balance incentives of multiple stakeholders. Fundamentally, institutional entrepreneurship tests the organization's ability to establish legitimacy amongst key players by transforming the underlying norms and behaviours of how an ecosystem operates (Van de Ven & Garud, 1994). There are multiple facets to how institutional entrepreneurship operates in the case of EMRI. Changing the "rules of the game" requires the organization to incorporate its own goals and procedures into the institutional environment (Ahlstrom et al., 2008; Hirsch, 1975; Meyer & Rowan, 1977). While EMRI expanded by lobbying the support of State politicians and bureaucrats, the organization simultaneously had to align their own goals with those of private players who provide the majority of hospital care in India, thus developing norms of interaction and influencing the perceptions of key stakeholders (DiMaggio, 1988; Fligstein, 1997). These players had to be coordinated and incentivized to carry out the effective deployment of emergency services in remote locations.

The effectiveness of different incentive mechanisms in aligning the interests of key players has both theoretical and practical relevance. Despite the tendency for public and private institutions to diverge in their objectives for inclusive innovation, our case would suggest they can be reconciled by sufficient incentives and coordination efforts enacted by an external agent. There have been many studies on institutional entrepreneurship within different industry contexts. Most suggest a degree of openness within the institutional environment towards change through creative agency, particularly in the adoption of technological innovations (Garud et al., 2002; Munir & Phillips, 2005). But while prior research has focussed on the conditions that enable institutional entrepreneurship (Greenwood & Suddaby, 2006) or the specific activities that take place (Maguire et al., 2004;

Dorado, 2005), this study follows on from another strand that focuses on how the identity of the institutional entrepreneur influences its context (Jain & George, 2007).

In our context, gaps in emergency medical services required an outside actor, in this case a technology software outsourcing company, to introduce new norms and practices to a divided ecosystem of public and private agents. The challenge as a PPP was coordinating both sides to overcome basic obstacles, including the introduction of a single emergency phone number, the availability and affordability of ambulance services in remote locations and getting around a difficult legal framework.

Other exemplars exist in health services as well; for example, Merck for Mothers is a not for profit organization committed to preventing death from complications during pregnancy and childbirth. Working with governments, international organizations, health professionals and a network of volunteers on the front line, Merck identifies innovations that might help save mother's lives, to guide investment decisions in accessible and affordable maternal health solutions and encourage multi-sector involvement across public and private institutions.

Coordination Costs and Business Model Design

The geographic dispersion of rural communities in India and the lack of integration between public and private healthcare providers result in high co-ordination costs; this deters established firms from making investments in key areas of healthcare. Our case study provides insight into how organizations can manage multi-party coordination and transaction costs in a context of no or low-profits through effective business model design.

Coordination is the act of aligning the activities of those engaged in joint action to achieve a desired outcome (e.g., Kotha, George & Srikanth, 2013). Problems that arise from coordination often result from misaligned incentives (Holmstrom & Milgrom, 1994) or the failure to transfer mutual knowledge across teams (Heath & Staudenmayer, 2000). Team co-

ordination is of particular concern in the case of EMRI due to the complex and fragmented nature of emergency response services, which require a large number of multi-skilled teams working together at different stages. Organizational scholars would suggest these difficulties are exacerbated when specialists from different knowledge domains work together. EMRI demonstrates the importance of service design and effective interfaces between interdependent players. Our case illustrates that by leveraging the organization's core competences (technology, process, project management and design), EMRI was able to construct a model whereby essential information could be transferred and coordinated across different stakeholders without bearing the cost of delivering the service. From the designation of a toll-free telephone number and alert system, to ambulance dispatch and a network of volunteers in rural communities, EMRI instituted a new ecosystem in which healthcare providers could operate.

EMRI started out with a vision to provide low cost emergency medical services in the Southern region of India. Borrowing elements from emergency delivery models in the UK, France and Germany, it devised a highly idiosyncratic business model, which could be applied to a context such as India. Literary emphasis on business models as a construct for understanding value creation (Amit & Zott, 2001) takes on a new meaning in this case, with success being measured in terms of societal value as well as the value delivered to key stakeholders within the government and private healthcare providers.

Moreover, its contribution to business model literature centres on how organizational costs were minimised as a result of a highly efficient transactive structure i.e. business model configuration which defines key transactions with partners and stakeholders (George & Bock, 2011). The transactive theme has been applied extensively in the context of e-business, most especially the dot-com boom. Yet in this case it can be applied to low-cost innovation under resource constraints where the fit between business model and strategy is similarly important

(Amit & Zott, 2001; Bock, Opsahl, George, & Gann 2012). It involves the organization making strategic decisions on which element of the service to prioritize and how it can be included within the existing constrained ecosystem. Some business models shift their transaction risk disproportionately to outside of their organization in order to keep costs down. While the cost of service provision was largely borne by the State, EMRI took a similar approach as the service provider, but did so in a way that allowed the State to bear a lower absolute cost burden. Therefore, by focussing on efficiencies in organizational structure and technology deployment through its call centres, the organization could deliver a high quality service at a very low cost level.

Capabilities, wellbeing and social welfare

Scholars have emphasized the development of capabilities that are intrinsic to communities as central to poverty alleviation in developing countries (Sen, 1992). The capability approach has influenced the social sciences by suggesting that freedom to achieve wellbeing depends on what individuals and communities are able to do for themselves (Comim, Qizilbash, & Alkire, 2008; Robeyns, 2005; Parikh et al., 2012). The literature so far falls into three categories of investigation: How capabilities originate within communities, the link between capabilities and development and the outcome of individuals and communities having gained these capabilities. In our context, EMRI developed localized capabilities through a series of coordinated actions within communities such as technology deployment via locally situated call centers, training for emergency services personnel through partnerships with Stanford School of Medicine and National University of Singapore Medical School, and leveraging an effective volunteer network of brand ambassadors, resource providers and service providers to overcome infrastructural challenges in India. Evidence from the EMRI case would suggest that it is possible for the development of capabilities to be

carried out by non-governmental players. While the focus of development economics literature has been on government intervention or multilateral institution intervention in developing local communities, EMRI provides an example of how private, non-profit organizations can create these kinds of capabilities and legitimize organisational activities.

Another example of this is Arogya Parivar (meaning 'healthy family' In Hindi), a profit making public health initiative led by Novartis to focus on disease prevention specifically amongst India's rural poor. With operations in 10 states across India, the program has simplified the healthcare delivery model, adapting to rural populations with low disposable income by making medicines affordable and emphasizing patient education. In order to extend their reach and sustain the business model in the long-term, Novartis has built local capabilities via an extensive network of 'health educators', usually local women, who are recruited and trained to raise awareness of disease prevention, while 'health supervisors' act as the program's sales force, ensuring that essential medicines are available in the most remote locations. Although considered by Novartis as a corporate responsibility or 'social business' initiative, it demonstrates a private venture's ability to deliver essential public services at a low cost to the consumer from which it also benefits. The program currently reaches 50 million rural Indians with plans to expand to 350 million in the next 10 years. It has also proved to be commercially viable, having achieved break-even within 30 months and a 25-fold increase in sales since 2007.

Theories of Open Innovation and Poverty Alleviation

In recent years, the idea that innovation processes are "open" or "distributed" has taken root and spread among academics, managers and policy-makers. The fundamental principal of open innovation is for managers to combine ideas that are both internal and external to the organization (Chesbrough, 2003). EMRI relied on open innovation models to

leverage IT technology and services across different markets and organizations to establish a workable business model which would enable economies of scale and scope. There were three delivery models in existence at that time namely Anglo-American, Franco-German and the developing economy's model. Realizing that all three had their own virtues and flaws, EMRI became aware that a readymade solution would not work in India as had proven true for many failed businesses that had tried to adopt foreign models. By borrowing from all three EMRI developed a tailor made business model for the Indian customer. Based on 'open' business model design (Alexy & George, 2013), their solution was a service platform which could combine the necessary involvement of multiple actors for the delivery of emergency healthcare services in rural and urban parts of India.

In the literature, Openness (Alexy, George, & Salter, 2013; Laursen & Salter, 2006) or Open Innovation (Dahlander & Gann, 2010) has also been equated to the number of external sources of innovation accessed through an organization's network. Scholars have advocated a vision of co-creating solutions to the problem of poverty (e.g., Prahalad, 2007; Prahalad & Mashelkar, 2010). EMRI established various forms of relationships with external actors, which played a central role in knowledge creation and in acquisition of ideas, resources and individuals from the external environment. Scholars have argued that the permeability of firms' boundaries where ideas, resources and individuals flow in and out of organizations has stimulated questions about the role of openness in innovation. Such permeable boundaries enabled EMRI to leverage its internal R&D, and develop new inventions with fewer resources and at a greater pace (Alexy et al., 2013; Hargadon & Sutton, 1997). EMRI also visited and benchmarked other Western services engaging in reverse innovation to reduce the overall cost burden by identifying functionalities that were essential as well as most useful to the local, Indian context.

Other exemplars abound. SMS for Life is a public private partnership between UK pharmaceutical company Novartis and the Government of Tanzania, also engaged in open innovation with technology companies such as IBM and Vodafone. The initiative was launched as a way of overcoming the supply chain problems that prevent malaria medicines from getting to patients in rural parts of Africa. By using widely available SMS and electronic mapping technology, it was possible to track weekly stock levels at public health facilities in order to eliminate stock outs and increase access to essential medicines. In keeping with one fundamental premise of open innovation that 'not all smart people work for you', the organization understood that no one organization had all the skills, so the group brought together relevant people from a number of different places – IT and process knowledge from Novartis, communications from Vodafone, mapping from Google, and project management from IBM. This collaborative approach enabled resource and knowledge sharing across multiple parties through open innovation processes. As a result, stock-outs were reduced from 79% to less than 26% in the 229 Tanzanian villages in which the project was piloted, enabling improved drug access to a population of nearly 1.2 million people.

Implications for Practice

As a case study, EMRI provides a concrete example of an innovation that has had systematic benefits to social wellbeing through careful cost-engineering and stakeholder management. It also sheds light on many issues relating to the practice of inclusive innovation, specifically the success factors and contextual challenges of effective enterprise within less developed countries. Some of the practical implications have been discussed in more prescriptive literature (e.g. Prahalad & Mashelkar, 2010) as well as in the context of organizations that leverage and enhance social capital in resource poor settings to empower 'bottom of the pyramid' communities (Ansari, Munir & Gregg, 2012). However, in our

chapter we highlight the key constituent factors of success, such as the institutional actions, governance structure and conditions necessary for enabling low cost innovation that delivers benefits to the bottom of the pyramid.

Conclusion

EMRI provides a glimpse into potential organizational traits for inclusive innovation: (1) an organizational design and governance mode that fostered entrepreneurship, and (2) a culture of low cost innovation and exacting standards for service delivery. These two broad constructs can be further unpacked into other constituent elements such as risk sharing and governance in PPPs, as well as design principles in low cost innovation and human capital development. Though these traits are likely seen in many similar examples in developing economy contexts, EMRI provides an example of rapid ramp-up and unprecedented scale in a very challenging context. Such in-depth case studies bring to life the challenges of organizing in the developing economy context: the challenge of scale, the challenge of coordination, and the challenge of sustainability. We encourage future research that addresses these challenges, not just as an effort at capturing best practices, but to identify causality, contingencies, and the boundary conditions for when inclusive innovation occurs, and how such innovations can be made grand successes to enfranchise the impoverished.

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Table 1: Health expenditure ratios in 2009

	Australia	China	**India**	UK	USA
Total expenditure on health as a % of GDP	8.5	4.6	**4.2**	9.4	16.2
Government expenditure on health as a % of total expenditure on health	70.1	50.3	**32.8**	83.6	48.6
Private expenditure on health as a % of total expenditure on health	32.3	49.7	**67.2**	16.4	51.4
General government expenditure on health as a % of total government expenditure	18.3	10.3	**4.1**	15.1	18.7
Private prepaid plans as a % of private expenditure on health	25.7	6.2	**2.3**	6.7	69.3

Source: World Health Organization – World Health Statistics

Table 2: Comparative data on casualties

Indicator Type (All figures are no. per 100,000 of the population)	UK	USA	India
Number of deaths in road accidents	6.06	14.75	**20.98**
Poisoning	1.85	6.75	**8.9**
Falls	3.45	3.96	**12.17**
Fires	0.58	0.97	**14.33**
Drowning	0.35	1.15	**6.67**
Other Unintentional Injuries	4.63	5.77	**25.67**
Self-inflicted injuries	7.06	10.22	**18.58**
Violence (riots, terrorism etc.)	2.04	6.18	**6.54**
Prematurity and low birth rate	3.47	3.13	**26.28**

Source: World Health Organization – World Health Statistics for 2003

Table 3: Timeline of EMRI

Date	Event
02-Apr-05	Memorandum of understanding (MoU) with the Government of Andhra Pradesh
15-Aug-05	108 services were launched in Andhra Pradesh
31-Dec-05	EMRI covered 5 towns with its 30 Ambulances covering a population of 15 million
31-Mar-06	EMRI new centre inauguration
26-Jan-07	108 services expansion to rural Andhra Pradesh
09-May-07	Agreement with Stanford USA for commencing 2 Year PGPEC
29-Aug-07	Inauguration of 108 services in Gujarat
05-Oct-07	MoU with the Government of Andhra Pradesh for Funding
25-Nov-07	Signed MoU with the Government of Madhya Pradesh
01-Dec-07	15 PRICE (Prime Responders In Case of Emergencies) Vehicles were launched. These specially equipped bikes can reach the victim quickly.
08-Mar-08	MoU with the Government of Uttarakhand
14-Jun-08	MoU with the government of Goa
08-Jul-08	Agreement with the Government of Assam
14-Aug-08	MoU with the Government of Karnataka
15-Sep-08	MoU signed between Tamil Nadu Government and EMRI
05-Nov-08	MoU with the Government of Meghalaya
17-May-10	MoU with the Government of Chhattisgarh
09-Jul-10	EMRI launches 108 services in Himachal Pradesh

Figure 1: Challenges of Access, Resources and Infrastructure

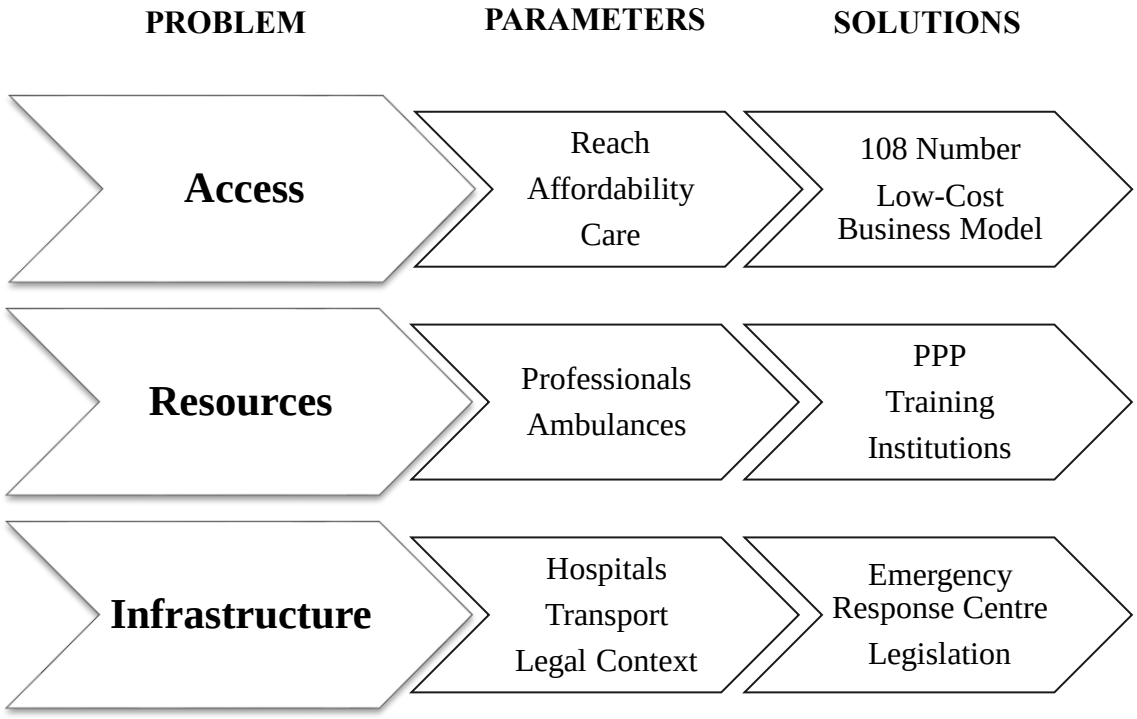


Figure 2: Process of Institutional Entrepreneurship

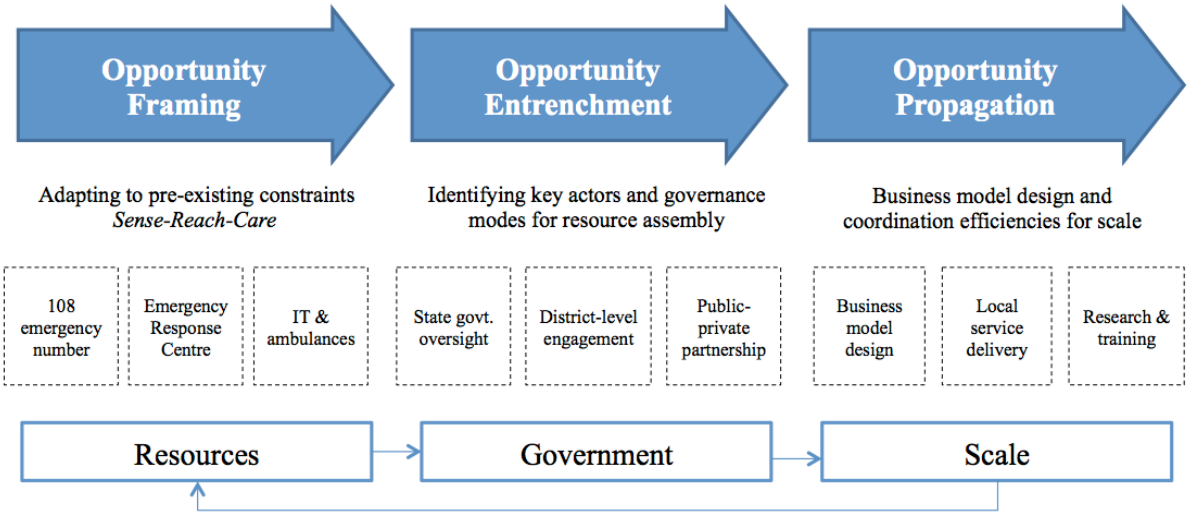
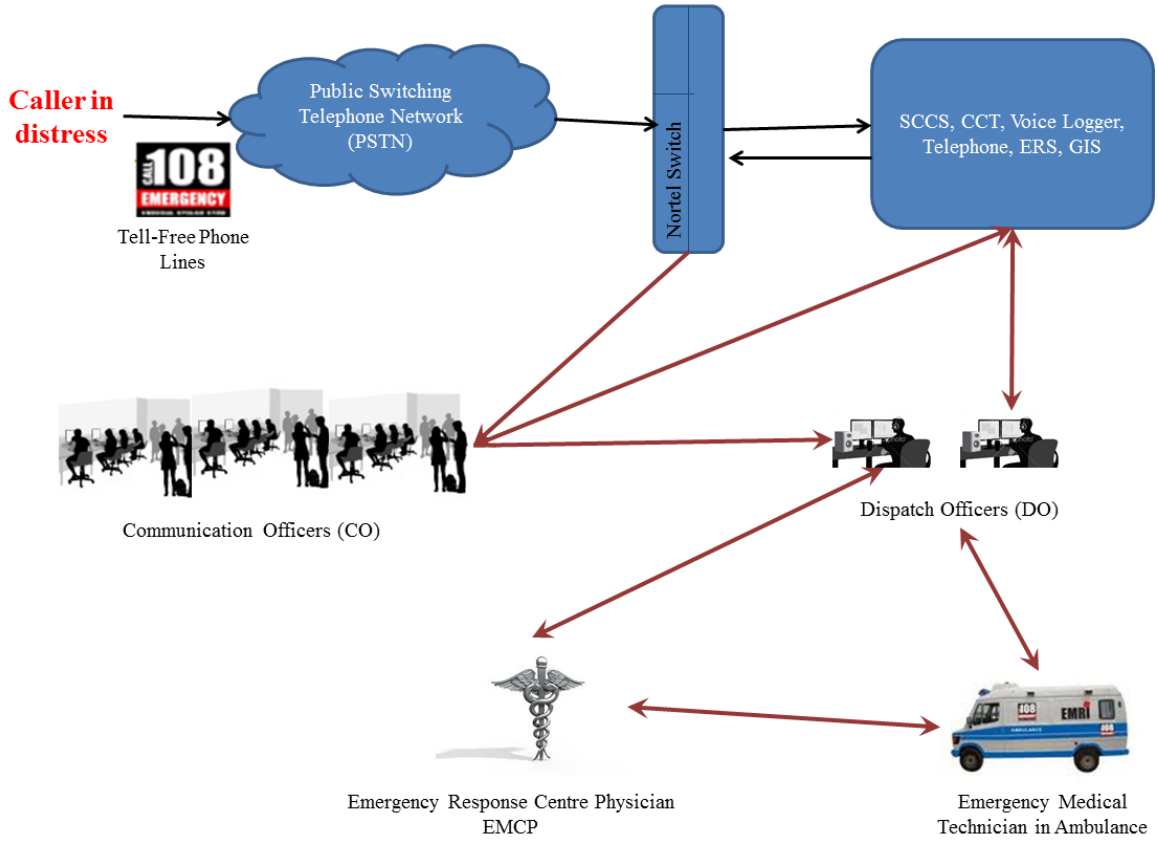


Figure 3: The Call Handling Operation



Source: Adapted from EMRI documents

Figure 4: The Sense-Reach-Care Paradigm

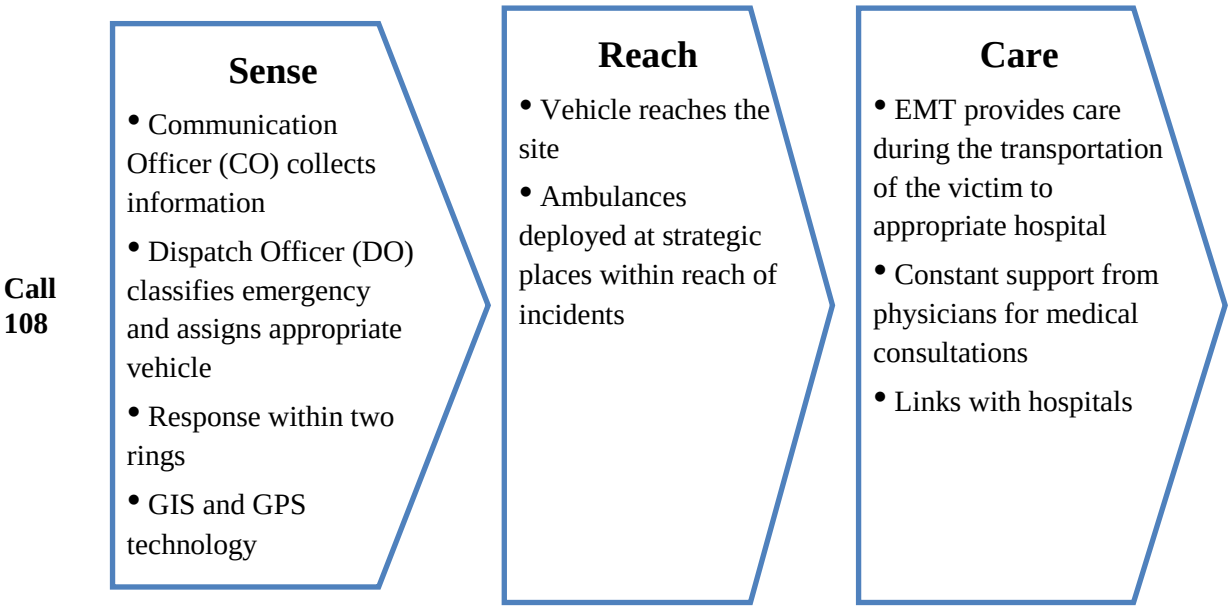


Figure 5: Interaction with key actors in the delivery of emergency health services

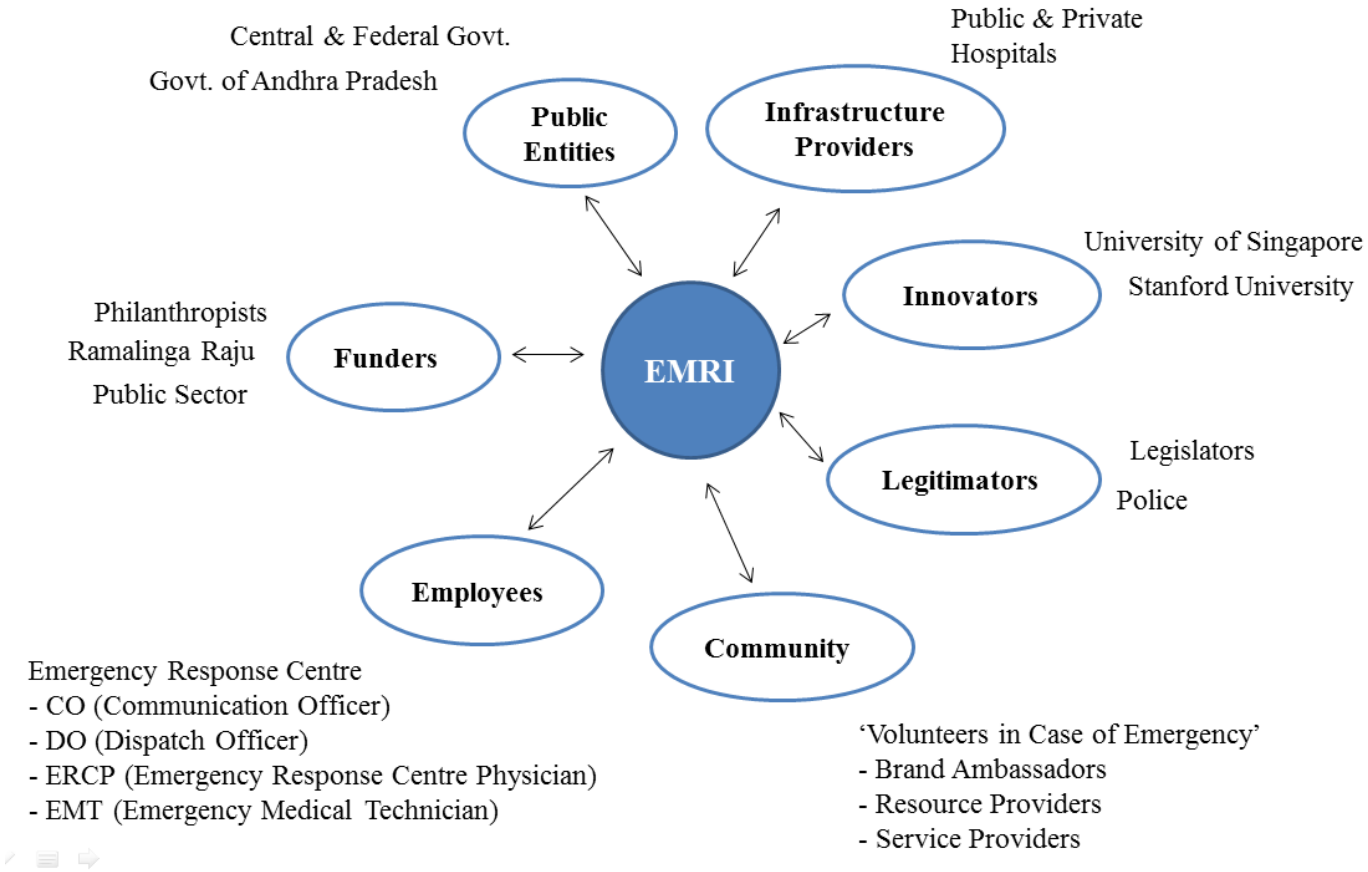
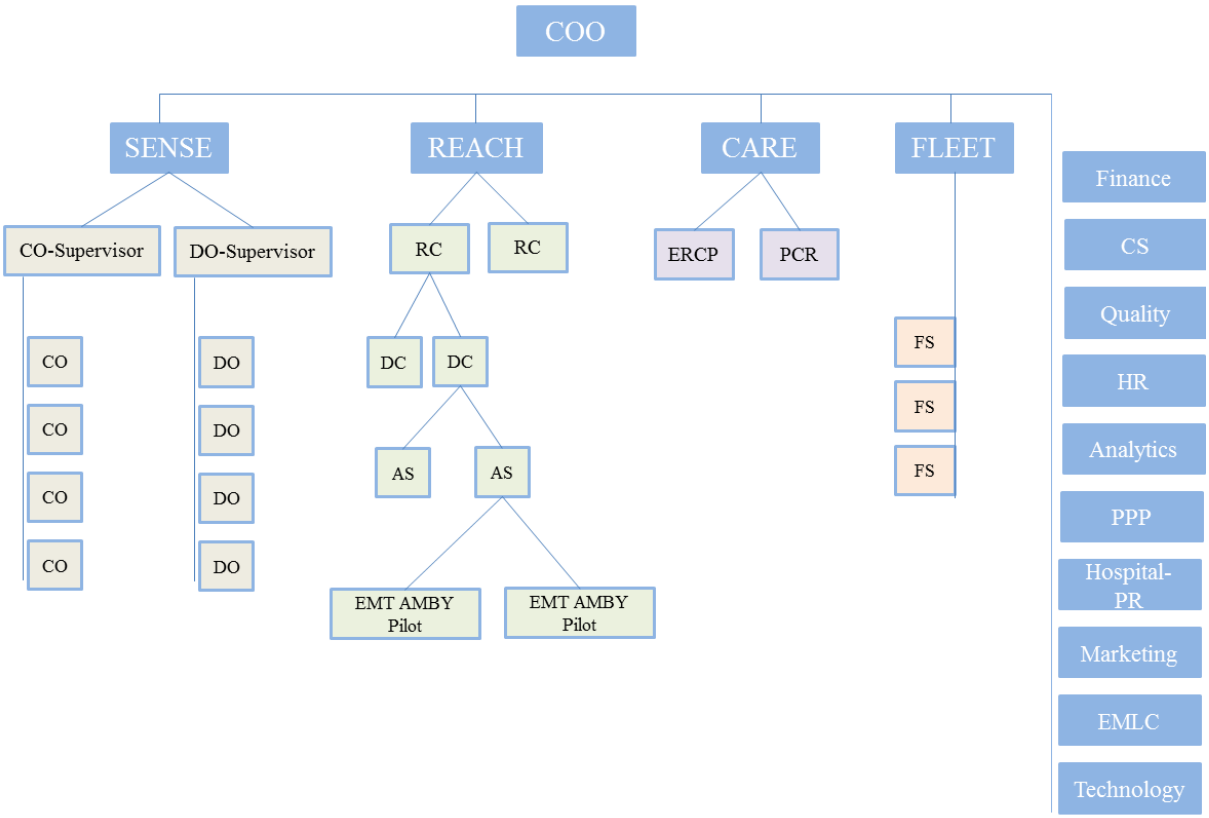


Figure 6: Organization Structure



Legend	Description	Legend	Description
AS	Ambulance Supervisor	ERCP	Emergency Response Centre Physician
CO	Communication Officer	FM	Fleet Manager
CS	Communication Services	FS	Fleet Supervisors
DC	District Coordinator	PCR	Patient Care Record
DO	District Officer	Pilot	Trained Driver
EMLC	Emergency Medical Learning Centre	PPP	Public Private Partnership
EMT	Emergency Medical Technician	RC	Regional Coordinator

Source: Adapted from EMRI documents